

GE6NF-F

GENERATOR, TWO-TONE

1.0 GENERAL This procurement requires a solid-state, audio signal generator with two independent outputs which may be combined to produce a two-tone test signal.

2.0 CLASSIFICATION The equipment shall meet the requirements of MIL-T-28800(), Type III, Class 5, Style E, Color R for Navy shipboard, submarine, and shore applications with the following modifications and exceptions:

- a. The relative humidity requirement is limited to 95% non-condensating.
- b. The operating and non-operating altitude requirements are not invoked.
- c. The Electromagnetic Interference Requirements (EMI) of MIL-T-28800() are limited to CE01 (relaxed 20 dB), CE03 (broadband limits relaxed 20 dB below 200 kHz), CS01, CS02 (0.05 to 100 MHz), CS06, RE01 (0.03 to 15 kHz), RE02 (14 kHz to 10 GHz) and RS03.
- d. Warm-up time extended to one hour.

3.0 OPERATIONAL REQUIREMENTS The equipment shall be provided with two independent outputs, each variable in frequency and amplitude. The equipment shall be provided with a method to monitor the frequency and level of each signal. These two outputs may be combined to form a composite two-tone signal. The following characteristics identified below shall apply to the individual outputs.

3.1 Frequency Characteristics

3.1.1 Range: At least 30 Hz to 20 kHz

3.1.2 Resolution: At least 1 Hz

3.1.3 Stability

3.1.3.1 Internal: Better than $\pm 2 \text{pp}10^5/\text{hr}$

3.1.3.2 External: Equal to the external frequency standard

3.1.3.2.1 External Reference: 1, 5 or 10 MHz signal, TTL compatible

3.1.4 Accuracy: $5 \text{pp}10^5$

3.1.5 Distortion

3.1.5.1 Intermodulation: -60 dBc (Both carriers at same level) [Composite Signal]

3.1.5.2 Harmonic: < 0.1% (-60 dBc) [30 Hz < F < 20 kHz]

3.1.5.3 Spurious (Hum): < 0.05% (-66 dBc) [30 Hz < F < 20 kHz]

3.2 Output Characteristics

3.2.1 Level: at least 43 mVrms to 4.3 Vrms (into matched 600 Ω load)

3.2.1.1 Accuracy: $\pm 0.5 \text{ dB}$ {30 Hz < F < 20 kHz; matched load}

- 3.2.1.2 Display: Digital; at least 3 digits
- 3.2.1.2.1 Units: Volts or dB
- 3.2.1.2.2 Resolution: 0.1 dB minimum
- 3.2.2 Impedance: $600\ \Omega \pm 10\%$ {at 1 kHz} [balanced & unbalanced]
- 3.2.2.1 Connector: Binding Post or compatible

4.0 GENERAL REQUIREMENTS

- 4.1 Power Source MIL-T-28800() nominal power source requirements are invoked. Maximum power consumption: 90W.
- 4.2 Lithium Batteries Per MIL-T-28800(), lithium batteries are prohibited without prior authorization. A request for approval for the use of lithium batteries, including those encapsulated in integrated circuits, shall be submitted to the procuring activity at the time of submission of proposals. Approval shall apply only to the specific model proposed.
- 4.3 Calibration Interval The calibration interval shall be 12 months minimum. The equipment shall be within all accuracy requirements specified herein, with a 72% or greater confidence factor following a calibration interval of 12 months.
- 4.4 Dimensions: The total volume of the unit shall not exceed 14,750 cm³ (900 in³).
- 4.5 Weight 10 kg (22 lb) maximum
- 4.6 Remote Operation The unit will be capable of remote operation via IEEE-488() bus interface. It shall operate as a talker or listener.